

**SPECIFICATION**

To All Whom It May Concern:

5        Be It Known That I, Carl D. Fuemmeler, a citizen of the United States whose full post office address is 2320 Deer Creek Court, Columbia, Missouri 65201, have invented certain new and useful improvements in

ROLLED FILM AND PALLET CONSTRUCTION

10

Cross Reference To Related Applications

This application is related to United States Provisional Patent Application 60/455,255 filed March 17, 2003 from which priority is claimed.

5

Background Of The Invention

1. Field of the Invention

10 The present invention relates to pallets for storing and transporting rolls of thin plastic tubing wrapped around a circular core. More particularly, the invention relates to a symmetrical pallet having openings in the deck to accommodate the ends of the core of the roll of film so that the pallets can be stacked one atop another in a stable package.

15 2. Background Prior Art

U.S. Patent No. 4,898,102 discloses a pallet assembly designed to support coils of sheet metal, sheet paper, or barrels and the like. The design is simple and relies upon a special notching that works to interconnect four pieces of square wood in a manner which provides a 20 pallet structure without the use of nails.

U.S. Patent No. 3,131,655 discloses a pallet designed to carry products that take the form of flat sheets, such as sheet steel and drywall material. A unique feature of the design is the use of three stringers wherein the center stringer has less vertical height than the outboard stringers. When loaded, the weight of the load on the pallet causes the center of the pallet to drop due to 25 the less tall center stinger. The resulting bow in the material acts to tilt the load toward the center of the pallet and thus resists the tendency of the flat sheets to slide off the pallet during pallet transportation.

U.S. Patent No. 2,570,757 discloses a pallet designed to store and transport bagged material. The pallet design includes a flat upper surface upon which two spacers are placed prior to the placement of bags upon the pallet. After the pallet is stacked with the bags, a compression device pushes downward on the bags to cause the bags to interlock and form around the spacers.

5 The spacers act to keep the bags from sliding off of the pallet and are removed when a fork lift is used to lift the load of bags from the pallet by inserting the forks of the lift into the openings left after the spacers are removed.

The device in U.S. Patent No. 3,237,786 is a pallet designed to store and transport piping material. The pallet has a flat upper surface which has two stop cleats on two opposite sides of

10 the pallet. The two stop cleats act as barriers which contact the longitudinal surface of the piping to prevent the piping from rolling off the pallet. A strap is used to contain higher levels of piping on the pallet.

U.S. Patent No. 4,230,051 discloses a pallet having a number of U-shaped retainers for holding loose material onto the upper surface of the pallet and to add strength to the pallet

15 structure.

U.S. Patent No. 4,184,435 shows a pallet design which consists of a number of pallet styles which can be constructed from waste material. Apparently, the purpose of the designs is to prevent the needless destruction of our national forests.

#### Summary of the Invention

20 The present invention comprises a pallet base that can be made of wood and is designed to hold coils of thin wall flexible plastic pipe produced in rolled form, particularly pipe used as irrigation tubing used to flood-furrow irrigate crops.

These and other objects and advantages will become apparent hereinafter.

Description of the Drawings

In the drawings wherein like numbers and letters refer to like parts wherever they occur.

Fig. 1 is a top plan view of the skid of this invention;

5 Fig. 2 is an end elevational view of the skid of Fig. 1;

Fig. 3 is a sectional view taken along line 3-3 of Fig. 1;

Fig. 4 is a detailed side elevational view partly in section of rolls of tubing in paperboard cartons loaded on a skid;

Fig. 5 is a detailed plan view of rolls of tubing on a skid;

10 Fig. 6 is a perspective view of a skid;

Fig. 7 is a perspective view of a stack of skids loaded with rolls of tubing not encased in paperboard;

Fig. 8 is a perspective view of a roll of tubing;

15 Fig. 9 is a perspective view of a series of stacked pallets with the rolls of tubing encased in packing cartons.

Fig. 10 is a perspective view of a stack of cartons on pallets.

### Detailed Description

The present invention involves a skid for rolled tubing. The tubing is thin-wall flexible plastic pipe produced in rolled form. A typical single roll has a 10 mil wall thickness, is 15 inches in diameter and is 1320 feet long. This product is extruded and wound on cores. A 5 finished roll of tubing (before unwinding) is cylindrical in shape; about 19 inches in diameter and 24 inches tall.

I have designed a special pallet or skid that allows one to package, transport, and store the finished product in a manner that is superior to any methods now being used. Some of the special features and benefits of the skid are:

10 1. It allows the rolls of tubing to be stacked vertically on the skid which provides for a more stable package.

2. Because the rolls can be stacked vertically on the skid, they become "columns" which allows the nesting of one skid on top of another without the use of additional load distributing devices such as shelving, racking or plywood slip sheets between skids. I have 15 successfully stacked the skids eight units high without any problems or damage. This ability to stack the skids greatly reduces required floor space for finished product for the manufacturer, the distributor and the user.

3. Each roll of tubing is wound on a cardboard core. In order for users to easily unwind the tubing when used, the cores protrude about 1-1/2" beyond the edge of the roll on 20 each side of the roll. The platform of the skids is designed in such a way that allows the core to clear the planks of the skid's platform. Therefore, when each roll is placed vertically on the skid the flat edge of the roll rests flat and level on the skid platform and the protruding cores slip through platform planks (due to plank spacing). Similarly, when a second skid is stacked on top

of a first skid, the bottom platform planks of the top skid are designed in such a way that allows the protruding core to clear the platform planks and hence the bottom of the top platform comes to bear on the top surface of the rolls on the lower or first skid. The skids can continue to be stacked vertically in this manner.

5        4.     Each skid is symmetrical in design so that it can be rotated 90 degrees in any direction and still be packed the same. The top and bottom of each skid is identical which allows for ease of use and proper nesting or stacking of the loaded skids one atop another.

5.     Before placing the roll of tubing on the skid, each roll of tubing is packed in a corrugated cardboard carton for protection. The carton is designed in such a way to allow the 10 cores to protrude through the carton and then protrude through the planks of the skid. This allows the flat edge of the roll to rest flat and level on the skid platform.

The attached drawings show the pallet and rolled film in detail. Figs. 1-3 show a pallet 10 which preferably is square and is symmetrical and the top and bottom are identical. This allows the pallet 10 to be rotated 90° in any direction and still be packed the same. The identical 15 top and bottom allow the skid to be used in any orientation and provides proper nesting when loaded skids are stacked atop each other. The skid 10 has longitudinal top stringers or planks 11a-d, lateral spacer ribs 12a-c and longitudinal bottom stringers or planks 13a-d which are aligned with the top stringers 11a-d. The stringers 11a-d and 13a-d are fastened to the edges of the ribs 12a-c.

20        The ribs 12a and 12c are positioned at the ends of the stringers 11a-d and 13, and the rib 12b is positioned at their centers. The stingers 11a-d and the ribs 12a-c are all preferably about 40 inches in length. The ribs 12a-c are boards preferably 1 ½" x 3 ½" and the stringers 11a-d and 13a-d preferably are boards 1" x 3 ½". The stringers 11a-d and 13a-d are spaced along the

ribs 12a-c such that there are two large rectangular openings 14 between the end stringer 11a and the nearest inner stringer 11b and between the end stringer 11d and the nearest inner stringer 11c. There are two thinner rectangular openings 15 between the innermost stringers 11b and 11c. Similar sized openings 14, 15 also are present between the bottom stringers 13a-d, making the 5 pallet 10 symmetrical on all sides.

The pallet 10 is designed to hold four rolls 20 of extruded flat tubing. The rolls are shown in broken lines in Fig. 4. The tubing is thin-wall flexible plastic pipe which is extruded and produced in rolled form on a paperboard core 21. The tubing in a single roll is preferably 10 mil wall thickness and about 15 inches in diameter and 1320 feet long. The roll dimensions are 10 about 19 inches in diameter and 24 inches tall. The core 21 has an extension 22 of about 1  $\frac{1}{2}$  inches past the ends of the roll 20 on each side of the roll 20 to facilitate handling by the customer.

The core extensions 22 fit into the large openings 14 between the stringers 11a-d and 13a-d so that the roll 20 will set flat on the skids 10 and a second pallet 10 can be stacked flat on 15 the top of the rolls 20.

The rollers 20 are packed in corrugated paperboard containers 25 (shown in broken lines in Fig. 4) which has openings 26 (Fig. 9) in the ends to allow the core extensions 22 to protrude and fit into the pallet openings 14. This allows the rolls 20 to reside flat and level on the skid 10 and allows stacking of loaded skids 10. The openings 26 are formed by the end flaps 27 and side 20 flaps 28. The end flaps 27 do not meet and the side flaps 28 also do not meet which forms the rectangular opening 26. Fig. 10 shows a stack of cartons 25 on pallets.

Figs. 6-8 show the skid 10 (Fig. 6); a stack of loaded pallets four skids high (Fig. 7); and a roll of film 20 showing the protruding core extension 22 (Fig. 8).

In view of the above, it will be seen that the several objects and advantages of the present invention have been achieved and other advantageous results have been obtained. As various changes could be made in the above constructions without departing from the scope of the invention, it is intended that all matter contained in the above description or shown in the accompanying drawings shall be interpreted as illustrative and not in a limiting sense.